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ABSTRACT

This study focused on the factors that were positive contributors to the success of two-year college students at six colleges who were or had been enrolled in basic skill developmental programs. For study purposes, success involved student eligibility to continue in a chosen program. Variables used in evaluating student success/non-success included scores on the Inventory of Personal Values and the Inventory of Interpersonal Values, faculty predictions, reading scores, rating of will and motivation, rating of goal orientation and program impact, and questionnaire responses concerning faculty response to needs, sureness of career goals, and skill area needs and application. Final academic year grade point averages and student enrollment status (probation, dismissed, withdrawn, or eligible to continue) served as dependent success variables. Data indicated that the major contributing factors to student success were the values of goal orientation, variety, conformity, and recognition, commitment to a firm career goal, personal choice of college and program, and a positive approach to the college experience. Both reading ability and faculty prediction were highly correlated with student success. It was concluded that environmental and background characteristics are less significant to success than variables within programs and affective/cognitive factors associated with students. (TR)

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POST-SECONDARY DEVELOPMENTAL STUDIES PROGRAMS

FOR OCCUPATIONAL STUDENTS:

AN IMPACT STUDY

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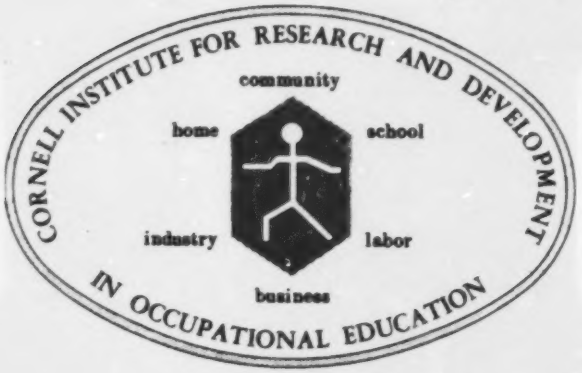

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IMPACT OF DEVELOPMENTAL STUDIES
IN VOCATIONAL EDUCATION TWO-YEAR COLLEGE PROGRAMS

VEA-TQ-2-526

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At the six two-year colleges that served as research sites, a staff member served as contact person(s) who worked closely with us and then orchestrated operational details locally. We can only guess at the amount of time and effort they have unselfishly contributed to the project. At each site additional developmental studies staff members became involved and contributed time and effort. At some sites non-developmental studies faculty also responded to requests for research information. We wish to acknowledge the cooperation and support of the individuals identified on the following pages and state our sincere appreciation for their efforts on behalf of the project. A share of any credit rightfully belongs to those who have contributed to the activity but we accept full responsibility for any perceived shortcomings.

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"Impact of Developmental Studies
in Vocational Education Two-Year College Programs"

Research Report

Introduction

During recent years, greater and greater numbers of students who may be classified as "non-traditional" enter two-year college programs. As recently as five years ago the term "non-traditional" usually referred to the economically and/or educationally disadvantaged students entering through "open-door" policies. Recently non-traditional has been used to describe a multiplicity of student groups including women and working adults seeking a career change or an updating of employment skills, citizens of the community sampling the expanding offerings of the two year college or individuals responding to educational consciousness heretofore not sensed. The wider availability of monetary support through social and educational agencies is instrumental in making college a feasible alternative for many students previously unable to attend. A common felt need of many non-traditional students is the acquisition of basic "survival skills" in order to function effectively in career programs. The numbers of students needing these special services have increased dramatically.

Institutions recognized the student needs for educational experiences of a remedial, developmental or supportive nature which increase chance of success in academic and career pursuits. This institutional recognition has given rise to a variety of program efforts that are often referred to as developmental studies.

In planning the study of developmental studies programs, the first problem became one of definition: What constitutes a developmental studies program? In the broadest sense, all instruction and service programs that provide remedial, compensatory or developmental emphases for the purpose of assisting students to succeed in educational endeavors could be included. This view, being as broad in scope as it is, could be applied to virtually any student with any type of weakness relevant to their educational endeavors. In practical usage, this wide ranging group of services is usually offered only to those students who are considered to be "educationally disadvantaged".

In approaching the question of definition, a systematic review of the literature revealed that institutional responses of two-year colleges have been as varied as the demands. While some two-year colleges have independent developmental studies programs offering a "block" of courses and selected faculty assigned to teach them, other colleges integrate their developmental instruction into regular academic department offerings. Some institutions offer summer workshops or a core or small block of two or three courses designed to prepare the student for work in regular college courses. Variances were also found in the approaches utilized for the selection of students, methods of teaching, content of programs and evaluative efforts. A more thorough review of literature is discussed elsewhere.[1]

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[1] Toward a Definition, VEA-#76-2-382, December, 1975.

Because of the wide variation in developmental studies programs among two-year colleges, the following definition was formulated for use in the project:

> Developmental Studies Programs are organized educational efforts to provide a range of learning experiences intended to ameliorate educational skill and attitude deficiencies of students in career programs.

The focus of the study was to determine the impact of these basic skill programs to the success of students in career programs. In making this determination, four basic questions emerged as critical:

- What are the characteristics of the students enrolled in developmental studies programs?
- Of what do these developmental programs consist and how are they organized?
- Why do some students who have had a developmental studies experience achieve academic or career success while others do not?
- Are there crucial aspects to developmental or remedial efforts that impinge on student success that may be identified as or as leading to program standards?

These and other related questions served to guide the methods and procedures utilized in the study.

Summary of Methods and Procedures

The need to collect basic information in order to describe the state-of-the art of developmental programs in the two-year institutions of New York State resulted in the major task for the first cycle of the project. The primary technique selected for the collection of these data was a state-wide survey by mail questionnaires.

The questionnaires were developed by project staff with inputs and recommendations provided by the project Advisory Committee. Written responses by these committee members to four open-ended questions dealing with institutional climate, student needs, institutional responsiveness and program commonalities, were analyzed and used as a resource pool for items and format during the initial stages of developing the questionnaires.

After field testing, final Advisory Committee review and final edits the instrument package resulted in seven forms (Appendix A). An "Overview" or Form A requested general information including institutional climate, student needs, developmental studies program descriptions, composition of the student body, faculty interactions and a judgmental rating scale of the developmental program. The other six forms B through G were each designed to collect descriptive information of specific program components: reading, math, study skills, writing, vocational-personal decision-making and an additional alternative component unique to specific institutions.

The instrument package was disseminated to the developmental program administrator at 61 two-year institutions offering occupational courses of study. Included were six Agricultural and Technical Colleges, eight private colleges, thirty-six community colleges and ten Economic Opportunity Centers. The responses from the 58% return were synthesized by a preliminary analysis which provided an information base for the document entitled "Overview - Developmental Studies for Occupational Students - A Sourcebook for Post-Secondary Programs".

Subsequent analysis of survey data employed cross tabulation or contingency table analysis and application of the chi-square test of

significance in order to identify associations among various environmental and programmatic variables. This analysis is reported elsewhere[1] in detail. The outcomes of these analyses, plus the concerns outlined in the sourcebook provided the framework for the second cycle of the project.

Reflecting these emergent concerns and questions, the following equation conceptualizes the research focus:

Dependent Variable		Independent Variables
Student Success	=	Environmental +
		Programmatic +
		Cognitive +
		Affective

Student success was defined as being eligible to continue in the program or course of study, or a conscious informed career decision made to change or leave the present program. Data relevant to the independent variables included faculty/staff attitudes, student characteristics, values and attitudes, instructor success predictions, the value and impact of developmental efforts and program specifics.

First year findings indicated that developmental programs had four broad approaches: block-scheduling, learning/skill centers, designated courses and integrated teaching. The first three approaches were utilized in over 90% of the institutions in some combination. Because of its limited use and lack of programmatic parameters, the integrated teaching

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[1] Survey of Developmental Studies Programs for Occupational Students: Reanalysis of Data, September 1976, VEA #TQ-2-526.

category, defined as a conscious effort to provide remedial/developmental instruction within regular course offerings, was not emphasized in the second cycle effort.

Survey results indicated that the range of student needs and backgrounds were represented by six institutional categories:

- -an Agricultural and Technical College that primarily serves a rural and lower SES population;
- -an Agricultural and Technical College that primarily serves a suburban and middle to upper SES population;
- -an upstate community college that primarily serves a rural local population;
- -an upstate community college that primarily serves an urban broadly-based population;
- -an urban community college that primarily serves an inner-city minority population; and
- -a private urban two-year institution that serves an urban broadly-based population.

The combination of institutional categories and their primary clientele plus the programmatic approach to developmental efforts served as rationale for selection of six sites at which to research the impact of these programs to students in career programs: Alfred Agricultural and Technical College, Borough of Manhattan Community College, Delhi Agricultural and Technical College, Jefferson Community College, Junior College of Albany and Ulster County Community College. A final but most critical criteria was the willingness of staff and college to serve as a cooperating research site and be part of the effort. The primary data source of the second research cycle was determined as students with a cognitive-affective emphasis in contrast to the first year which drew its

information from staff members involved in developmental programs and focused on environment and program.

The research methodology for the second year included data collection by questionnaires and standardized instruments from developmental and non-developmental students and staff during the last half of the first semester. The same instruments were utilized with developmental students, and when appropriate with non-developmental students, on a pre-post basis during the second semester. In the early spring, interviews were held with a representative sample of developmental students and with developmental staff.

The following groups were requested at each site in order to approximate a longitudinal examination of developmental students and to make comparisons:

- *a random sample of students in their initial enrollment in developmental studies, fall and incoming for spring.*
- *a random sample of students previously enrolled in developmental studies.*
- *a random sample of students never enrolled in developmental studies to serve as a comparison group.*

In all cases, the students comprising these groups were primarily those enrolled in occupational education programs or in pre-programs for career programs.

In order to determine instrumentation needs for collection of appropriate data, a review of standardized instrumentation was completed.

The Inventory of Personal Values and the Inventory of Interpersonal Values[1] were selected as standardized techniques to determine value factors such as goal orientation, achievement, variety and conformity. A student questionnaire was developed specific to project emphases with one form appropriate to developmental students and an adapted form for non-developmental students (Appendix B).

In order to obtain inputs from faculty, a reaction sheet was composed for developmental staff and non-developmental staff. The purpose of these forms was two fold. In addition to information and reactions, a pool of descriptors and words were collected and utilized in the development of a faculty success Predictor Scale for developmental students (Appendix C).

After recommended revisions and field testing and direct input from the Advisory Committee, the questionnaires were color-coded and readied for administration. After preliminary analysis of student data an interview schedule was developed for use in individual student interviews at each site. A faculty interview schedule was also developed for use in small group interviews of developmental staff at the cooperating sites (Appendix D).

The data collection plan was outlined and implemented through the cooperation of the developmental staff members at the six sites as follows:

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[1] Survey of Personal Values, Leonard V. Gordon, Science Research Associates, Inc., Chicago, Illinois. 1964-1965.

Survey of Interpersonal Values, Leonard V. Gordon, Science Research Associates, Inc., Chicago, Illinois. 1960.

Who?	What? Data Collection Techniques?	When?
Random sample of three groups - first semester: -first year occupational education students currently enrolled in developmental studies. -occupational education students previously enrolled in developmental studies. -occupational education students never having been enrolled in developmental studies.	1. Standardized reading score as appropriate. 2. Grade point averages as appropriate. 3. Appropriate form of student questionnaire. 4. Standardized measure of personal values.	BY END OF FIRST SEMESTER
Developmental staff members. Sample of non-developmental staff.	1. Standardized measure of personal values. 2. Appropriate form of staff questionnaire.	BY END OF FIRST SEMESTER
Random sample of incoming occupational education students for second semester enrolled in developmental studies --- a pre and post administration of instruments.	1. Standardized measure of personal values. 2. Appropriate form of student questionnaire.	AT BEGINNING AND END OF SECOND SEMESTER
Developmental staff members.	1. Success Predictor Scale. 2. Small group interviews by project staff.	DURING EACH SEMESTER DURING EARLY SPRING
Representative sample of developmental students.	1. Personal interviews by project staff.	DURING EARLY SPRING

After tabulation the data were analyzed to determine significant relationships, predictive values and profile information through cross tabulation, contingency table analysis and chi-square test of significance, Pearson R correlations and correlation matrixes, T values for significance, multiple regression (SPSS), frequencies, means and percentages.

Population Profiles

Student questionnaires were designed to obtain a demographic profile of non-traditional students and their opinions and perceptions. It was hypothesized that student commitment to college and/or program plus the strength of their career goal commitment would be significant variables in the determination of success or non-success. Several questionnaire items emphasized these factors. Student perceptions of whether the two-year institutions were meeting their needs were also sought. The Inventories of Personal and Interpersonal Values were selected as appropriate companions to the questionnaire because they measure congruent factors such as goal orientation, achievement and decisiveness.

In the first semester, 318 students enrolled in developmental programs at the six sites and 140 non-developmental students at four sites completed the instruments midway through the term. The non-developmental students served as a comparison group. During the second semester 106 initial enrollment developmental students and 36 non-developmental students completed the instruments on a pre-post basis. These three administrations provided a variety of time-points which, in combination with the interview

information and other data, approximated a longitudinal study. The few responses from students who had been enrolled in developmental programs during a previous semester were included within the total group of developmental students.

Summary of Variables Obtained From Questionnaire Items. Profile characteristics for the developmental and non-developmental groups are outlined in Figures 1, 2 and 3. Each composite summary is based on the number of usable responses for each group as indicated.

As shown in Figure 1, the mean age range of developmental students in the first semester was 20-21 -- approximately two years older than traditional age range of two-year college students. The percentages for the age groupings further emphasize this finding -- 42.1% are 20 and over, and 16.4% are in the 36-50 age range. Approximately 90% were in their first semester of college. The mean reading stanine was 4.8. At the end of the second semester of enrollment, over 75% of these developmental students received a grade point average of 2.0 and above.

A majority indicated they were attending the college of their choice with 65.0% indicating the basis of that choice as finances or location as opposed to program. Approximately half indicated they had been influenced in their college choice -- primarily by friends and parents.

The choice of program was seen by a large majority to be a personal choice with future employment in their chosen field of study as a goal for half of the students. Transfer was projected by another 35.2%. The

FIGURE 1

SUMMARY: DEVELOPMENTAL STUDENT RESPONSES - FIRST SEMESTER - COMPOSITE

	Mean Range	under 17	18-19	20-21	22-25	26-35	36-50
Age:	20-21	2.2%	55.7%	9.8%	9.3%	16.4%	6.6%

	Male	Female
Sex:	57.9%	42.1%

	1	2	3	4
Semester of Enrollment:	89.8%	5.4%	3.0%	1.8%

	0-.99	1-1.99	2-2.99	3-3.99
Grade Point Average:	1.1%	20.1%	56.4%	22.3%

Average Reading Stanine: 4.8

	Yes	No
College First Choice:	77.9%	22.1%

	Program	Other (i.e. location and financial)
--Basis of Choice:	35%	65%

	Not Accepted by First Choice	Program	Location	Financial	Other
--Basis for Accepting Alternative:	42.5%	27.5%	20.0%	2.5%	7.5%

	Yes	No
Choice Influenced by Others:	51.7%	48.3%

	Parents	H.S. Counselor	H.S. Teacher	Friends	Other
--Who Influenced:	26.0%	19.8%	1.0%	30.2%	22.9%

	My Personal Choice of Program Selection	External Influences on Program Selection
Why Enrolled in Program:	78.8%	21.2%

	Transfer	Employment in My Field of Study	Employment Outside My Field of Study	No Plans	Armed Forces	Other
Career Goal After This College:	35.2%	50.0%	2.2%	8.8%	1.1%	2.7%

	Very Sure	Moderately Sure	Not Sure
--How Sure:	48.3%	40.0%	11.7%

	Yes	No	Best Compromise
--Program a Useful Step:	89.4%	2.2%	8.4%

	Don't Know	Yes	To Some Extent	No
Perception of College Response to Student Needs:	3.4%	56.0%	38.9%	1.7%

	Negative 1	2	3	4	Positive 5	N
Perception of Faculty/Staff Response to Student Needs:	2.1%	2.8%	21.7%	47.2%	26.1%	3.9

N = 187

current program of study was seen as a useful step toward their career goal by about 90% and 88.3% were at least moderately sure of that vocational objective.

In general, the response of college and staff to student needs was perceived as positive. Over 94% believed the college met student needs in some degree. The response of faculty to student needs was rated with a positive mean of 3.9 on a 5-point scale.

Figure 2 indicates that the mean age range of the second semester developmental student sample is also 20-21, again pointing to the ever increasing age level of the two-year college student. This trend is emphasized by the percentage breakdown of age grouping -- over 22% are 22 to 25, over 25% are 26 and older. Consistent with the first semester population, approximately half of the developmental students are in adult age ranges that were historically considered as having completed formal education.

As to enrollment, 68% were in their first semester and 32% were enrolled for the second through fifth semester at college. The average reading stanine was 4.7 -- almost identical to the first semester group. The GPA for this group reflects one semester of college work with 64% attaining 2.0 and above. For a majority, the instructional experience was largely comprised of preparatory or developmental instructional activities. In contrast, the GPA for the first semester group summarized in Figure 1 was based on two semesters of work -- one with regular college programs.

FIGURE 2

SUMMARY: DEVELOPMENTAL STUDENT RESPONSES - SECOND SEMESTER - COMPOSITE

	Mean Range	under 17	18-19	20-21	22-25	26-35	36-50	over 50
Age:	20-21	2.8%	31.1%	17.9%	22.6%	19.8%	3.8%	1.9%

	Male	Female
Sex:	60.4%	39.6%

	1	2	3	4	5
Semester of Enrollment:	68.0%	14.4%	2.1%	13.4%	2.1%

	0-1	1-2	2-2.5	2.51-3	3.01-3.5	3.51-4
Grade Point Average:	15.1%	20.8%	7.5%	31.1%	9.4%	16%

Average Reading Stanine: 4.7

		Yes	No
College First Choice:	a)	83.7%	16.3%
	b)	88.7%	11.3%

		Program	Other (i.e. location and financial)
--Basis of Choice:	a)	45.1%	54.9%
	b)	38.1%	61.9%

		Not Accepted by First Choice	Program	Location	Financial	Other
--Basis for Accepting Alternative:	a)	10%	40%	20%	10%	20%
	b)	16.7%	50%	8.3%	16.7%	8.3%

		Yes	No
Choice Influenced by Others:	a)	40.4%	59.6%
	b)	41.4%	58.5%

		Parents	H.S. Counselor	H.S. Teacher	Friends	Other
--Who Influenced:	a)	20.9%	7.0%	9.3%	41.9%	20.9%
	b)	21.9%	15.6%	3.1%	34.4%	25%

		What I Want to Study	Closest to What I Wanted	Waiting to Transfer	Advised to Enroll	Other
Why Enrolled in Program:	a)	59%	16.2%	12.4%	9.5%	2.9%
	b)	54.2%	18.1%	13.9%	12.5%	1.4%

CONTINUED...

		Transfer	Employment in My Field of Study	Employment Outside My Field of Study	No Plans	Other
Career Goal After This College:	a)	30.2%	60.4%	.9%	6.6%	1.9%
	b)	30.6%	54.2%	2.8%	9.7%	2.8%

		Very Sure	Moderately Sure	Not Sure
--How Sure:	a)	46.2%	43.4%	10.4%
	b)	50.0%	38.9%	11.1%

		Yes	No	Best Compromise
--Program a Useful Step:	a)	87.5%	1.9%	10.6%
	b)	76.1%	2.8%	19.7%

		Don't Know	Yes	To Some Extent	No
Perception of College Response to Student Needs:	a)	1.0%	62.6%	35.4%	1.0%
	b)	34.3%	48.0%	17.6%	1.0%

		Negative 1	2	3	4	Positive 5	N
Perception of Faculty/ Staff Response to Student Needs:	a)	1.9%	5.8%	23.3%	41.7%	27.2%	3.8
	b)	1.4%	8.3%	27.8%	31.9%	30.6%	3.8

a) pre-administered early in semester
b) post-administered late in semester

N = 106

A large majority were attending the college of their first choice. At the beginning of the semester, the basis of decision was related to program in less than 46% of the instances. This perception was reduced by seven percentage points at the end of semester when 38.1% identified program as reason for attending their college. The results of the post administration reflects the finding for first semester developmental students of 35%. Of the 40% who had been influenced in their college choice, friends were identified as influential most frequently.

Approximately 90% were sure of their career goals and a large majority perceived their current program as a useful step in meeting that goal. It should be noted that the term "current program" may have been interpreted differently by students. The phrase may have meant the preparatory instruction to some or to others, it may have carried the connotation of intended career program. Employment within their field of study was the objective for a majority. Transfer to another institution was planned by approximately a third of the responding students. Although there was some shifting in mean percentages from the pre to the post administration, it was not significant.

The responses to student needs by institution and faculty/staff were rated as generally positive at both the beginning and end of the semester. There was some shift in the rating of college response with a 14 percentage point drop for "yes", a 17 percentage point drop for "to some extent" and a 33 percentage point increase for "don't know".

In general there were few differences between the first and second semester groups relative to the variables comprising the composite summary

profiles. Differences that did occur, tended to diminish by the time of post responses by the second semester sample.

Figure 3 summarizes the characteristics of the non-developmental students that responded to the modified form of the student questionnaire during first semester. The number of usable responses from non-developmental students during the second term were minimal and therefore not included in this analysis. In contrast to developmental students the mean age range points to a younger and traditional level -- 19. The non-developmental group included a larger percentage of females (59.1%) than either of the developmental groups at 42.1% and 39.6%. A majority were in their initial semester of college enrollment.

Like developmental students, a majority of the non-developmental students were at the college of their choice. Factors other than program such as location also tended to be important in college selection by these students. When the current college was an alternative, the rationale of choice indicated program for 35.3%, finances for 14.1% and not accepted by preferred college at 14.7%. This rejection factor was more critical for the first term sample of developmental students at 42.4%. An emphasis of personal preference is underscored by 56.9% of non-developmental students who selected their course of study based on personal desires in contrast to other impinging factors such as advisement or as a substitution. Parents primarily (32.8%) and friends secondly (20.9%) were significant others influential to college choice.

Similar to developmental students, career goals were held as at least "moderately sure" by a large majority (87.8%) and their current program a

useful step toward this goal (79.4%). Ratings of college and faculty responses to student needs reflected the generally positive perceptions provided by the developmental students.

FIGURE 3

SUMMARY: NON-DEVELOPMENTAL STUDENT RESPONSES - FIRST SEMESTER - COMPOSITE

Age: 19-21

Sex:	Male	Female				
	40.9%	59.1%				
Semester of Enrollment:	1	2	3	4	5	6
	54%	4.2%	33.2%	5.7%	1%	1.9%
College First Choice:	Yes	No				
	66.3%	33.7%				
--Basis of Choice:	Program	Location	Finances	Other		
	42.3%	40.8%	14.1%	2.8%		
--Basis for Accepting Alternative:	Not Accepted by First Choice	Program	Location	Financial	Other	
	14.7%	35.3%	17.6%	20.6%	11.8%	
Choice Influenced by Others:	Yes	No				
	47.5%	52.5%				
--Who Influenced:	Parents	H.S. Counselor	H.S. Teacher	Friends	Other	
	32.8%	2.5%	7.6%	20.9%	13.7%	
Why Enrolled in Program:	What I Want to Study	Closest to What I Wanted	Waiting to Transfer	Advised to Enroll	Other	
	56.9%	16.7%	7.8%	6.9%	11.8%	
Career Goal After This College:	Transfer	Employment in My Field of Study	Employment Outside My Field of Study	No Plans	Other	
	32.4%	51.0%	4.9%	7.8%	3.9%	
--How Sure:	Very Sure	Moderately Sure	Not Sure			
	49.8%	38.0%	12.2%			
--Program a Useful Step:	Yes	No	Best Compromise			
	79.4%	8.8%	11.8%			
Perception of College Response to Student Needs:	Don't Know	Yes	To Some Extent	No		
	1.2%	55.5%	37.9%	5.4%		
Perception to Faculty/ Staff Response to Student Needs:	Negative 1	2	3	4	Positive 5	
	-	5.6%	20.5%	49.3%	24.6%	

N = 140

Comparison of Developmental and Non-Developmental Students on Selected Factors. *When comparing developmental and non-developmental students on the dimension of career-college commitment, the greatest differences appear with variables related to college choice.*

TABLE 1

COMPARISON OF CAREER-COLLEGE COMMITMENT FOR DEVELOPMENTAL AND NON-DEVELOPMENTAL STUDENTS: MEAN PERCENTAGE SUMMARY OF SELECTED ITEMS

		Yes	No			
1. Was this college your first choice?	a)	75.5%	24.5%			
	b)	66.3%	33.7%			
		Offered Program I Wanted	Location	Finances	Other	
If yes, why	a)	37.8%	35.7%	18.4%	8.2%	
	b)	42.3%	40.8%	14.1%	2.8%	
		Not Accepted by First Choice College	Offered Program I Wanted	Location	Finances	Other
If no, why	a)	42.4%	21.2%	21.2%	6.1%	9.1%
	b)	14.7%	35.3%	17.6%	20.6%	11.8%
		Transfer to Another College	Seek Employment Within Field of Study	Seek Employment Outside Field of Study	No Plans	Other
2. What is your career goal after completing work at this college?	a)	38.1%	46.3%	1.6%	10.1%	3.9%
	b)	32.4%	51.0%	4.9%	7.8%	3.9%
		Very Sure	Moderately Sure	Not Sure		
3. How sure are you of your career goal?	a)	51.5%	38.6%	9.9%		
	b)	49.8%	38.0%	12.2%		
		What I Really Wanted	Closest to What I Wanted	Taking It Until I Can Transfer	Advised to Enroll	Other
4. Why did you enroll in your course of study?	a)	56.9%	21.6%	10.2%	6.7%	4.7%
	b)	56.9%	16.7%	7.8%	6.9%	11.8%
		Yes	No	Best Compromise		
5. Do you feel that your program is a useful step toward your career goal?	a)	87.7%	4.0%	8.3%		
	b)	79.4%	8.8%	11.8%		

a) = developmental students — 318
b) = non-developmental students— 128

Data indicate that more developmental than non-developmental students were enrolled at the first choice college. Of those students enrolled in an alternative choice college, over 42% of the developmental students had not been accepted by their first choice college compared with 14.7% of the non-developmental group. A greater percentage of the comparison or non-developmental group tended to make their college selection based on programs offered. This held true in cases of primary or alternative choices. Fewer non-developmental students tended to view their current program as a significant step toward their career goal than did developmental students.

Responding developmental students in both spring and fall terms indicated skill areas in which they felt a need for further instruction and identified those skill areas for which they found application to their regular course of study. The results are summarized by semester, in Figures 4 and 5.

FIGURE 4

PROBLEM SKILL AREAS: SUMMARY OF FREQUENCY PERCENTAGES FOR DEVELOPMENTAL STUDENTS ENROLLED FOR FIRST SEMESTER

	Percentage of Students Indicating Need for Help With Skills	Percentage of Students Indicating Application of Skills to Regular Coursework
to read more quickly	70.6%	59.9%
to understand more of what I read	71.7%	62.7%
to read more difficult materials	64.2%	50.8%
to use my time more effectively	49.7%	50.8%
to complete all assignments in the time I have	32.1%	46.5%
to learn how to take notes in class	48.1%	59.4%
to learn how to outline readings	54.5%	49.7%
to be able to compute more accurately	34.8%	32.6%
to be able to reason more effectively	36.4%	45.5%
to perform algebraic computations more effectively	35.3%	27.8%
to be able to write more effectively	63.6%	56.1%
to make fewer mistakes in spelling	56.7%	48.1%
to complete written assignments that are acceptable and understandable	47.6%	50.8%
to be more comfortable when I speak	35.8%	34.8%
to be able to make my meanings clear when I speak	34.2%	36.4%
to keep interested in my courses	31.6%	38.5%
to make decisions about my career	29.4%	41.7%
to know and understand myself	21.9%	36.9%
to be able to set goals for myself	28.3%	40.1%
to be sure I'm choosing the best courses	27.3%	38.5%
to get along better with people	13.4%	44.4%
to have more fun at college	13.4%	36.4%

N = 187

FIGURE 5

PROBLEM SKILL AREAS: SUMMARY OF FREQUENCY PERCENTAGES FOR DEVELOPMENTAL STUDENTS ENROLLED FOR SECOND SEMESTER

		Percentage of Students Indicating Need for Help With Skills	Percentage of Students Indicating Application of Skills to Regular Coursework
to read more quickly	a)	64.2%	45.3%
	b)	43.4%	41.5%
to understand more of what I read	a)	68.9%	45.3%
	b)	35.8%	39.6%
to read more difficult materials	a)	58.5%	34.0%
	b)	43.4%	28.3%
to use my time more effectively	a)	47.2%	40.6%
	b)	33.0%	32.1%
to complete all assignments in the time I have	a)	20.8%	52.8%
	b)	24.5%	34.0%
to learn how to take notes in class	a)	37.7%	45.3%
	b)	25.5%	38.7%
to learn how to outline readings	a)	45.3%	35.8%
	b)	30.2%	34.0%
to be able to compute more accurately	a)	41.5%	36.8%
	b)	29.2%	23.6%
to be able to reason more effectively	a)	36.8%	41.5%
	b)	24.5%	32.1%
to perform algebraic computations more effectively	a)	45.3%	29.2%
	b)	42.5%	24.5%
to be able to write more effectively	a)	57.5%	35.8%
	b)	42.5%	34.0%
to make fewer mistakes in spelling	a)	55.7%	33.0%
	b)	35.8%	37.7%
to complete written assignments that are acceptable and understandable	a)	38.7%	45.3%
	b)	30.2%	32.1%
to be more comfortable when I speak	a)	36.8%	33.0%
	b)	25.5%	25.5%
to be able to make my meanings clear when I speak	a)	34.0%	37.7%
	b)	24.5%	32.1%
to keep interested in my courses	a)	34.0%	44.3%
	b)	21.7%	34.0%
to make decisions about my career	a)	24.5%	34.0%
	b)	18.9%	32.1%
to know and understand myself	a)	17.9%	41.5%
	b)	17.0%	27.4%
to be able to set goals for myself	a)	20.8%	46.2%
	b)	19.8%	30.2%
to be sure I'm choosing the best courses	a)	29.2%	28.3%
	b)	19.8%	27.4%
to get along better with people	a)	17.0%	39.6%
	b)	9.4%	31.1%
to have more fun at college	a)	6.6%	42.5%
	b)	12.3%	24.5%

a) pre-administered to developmental students at beginning of semester
b) post-administered to developmental students at end of semester

N = 106

In both semesters developmental students identified six areas most frequently as those in which they felt a need:

-to read more quickly
-to read more difficult materials
-to be able to write more effectively
-to understand more of what I read
-to make fewer mistakes in spelling
-to learn how to outline readings

The identification of need in skill areas reduced in frequency from the beginning to the end of the second semester except in two areas: to complete all assignments in time available, and to have more fun at college.

In the first semester, non-developmental students (N=128) responded to the question of whether they had sensed a need for help in basic skill areas. The responding non-developmental students indicated their need with far less frequency (range of 3.2% to 14.2%) for help with basic skills. Data indicate that developmental students identified the following skill areas a significantly greater number of times than did non-developmental students (.05 level):

-to read more quickly
-to understand more of what I read
-to use my time more effectively
-to complete all assignments in the time I have
-to learn how to take notes in class
-to learn how to outline readings
-to be able to compute more accurately
-to perform algebraic computations more effectively
-to be able to write more effectively
-to make fewer mistakes in spelling

-to complete written assignments that are acceptable and understandable

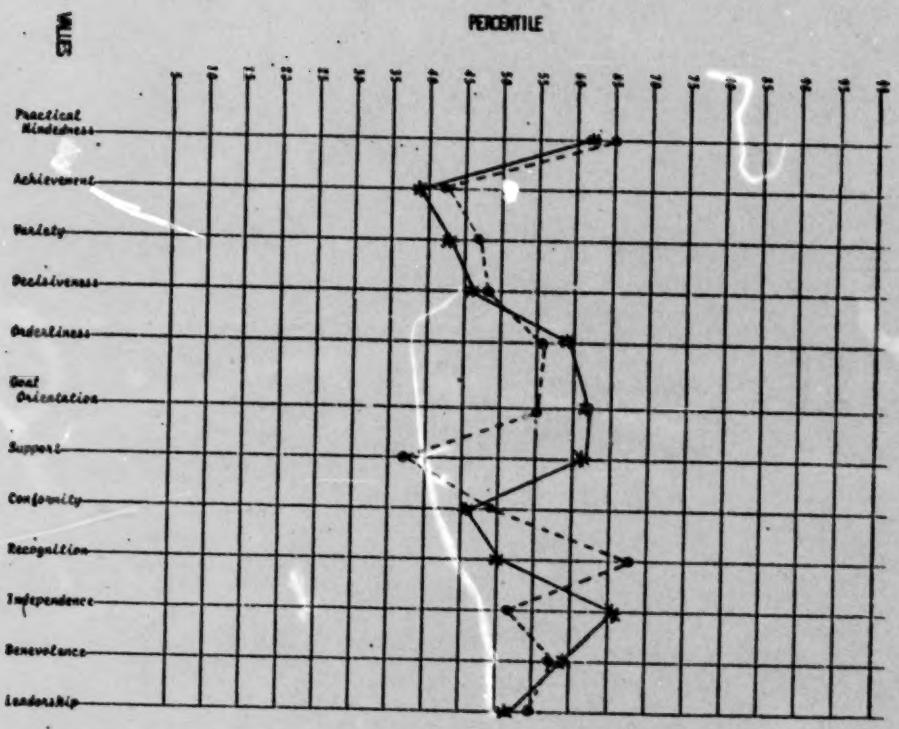
-to know and understand myself

-to be able to set goals for myself

Developmental students not only identified the need for effective skills in reading, writing, computational and study skills significantly more than non-developmental students, but also identified the need for experiences that would aid in the understanding of self and in the process of setting realistic goals more often.

Summary of Value Factors. In addition to the questionnaires, developmental and non-developmental students responded to the SRA Inventory of Personal Values and Inventory of Interpersonal Values. These standardized instruments identified factors such as goal orientation, achievement, conformity and support that were valued by students. Figure 6 outlines the mean percentiles attained for each value in the pre and post administration of the spring term.

FIGURE 6



Composite of Second Semester Developmental Students

——✳—— = pre-administered early in semester

- - - -●- - - - = post-administered late in semester

N = 106

The mean percentile for the value of support decreased significantly from better than the 60th percentile to less than the 40th percentile during the course of the semester. A decrease for independence occurred from the 65th to 52nd mean percentile. The mean percentile for the value of recognition increased from the 50th percentile at the beginning of the term to the 68th percentile at the end of the semester. The factors that increased and decreased are described in the Inventory Manual as:[1]

> *Support: Being treated with understanding, receiving encouragement from other people, being treated with kindness and consideration.*
>
> *Independence: Having the right to do whatever one wants to do, being free to make one's own decisions, being able to do things in one's own way.*
>
> *Recognition: Being looked up to and admired, being considered important, attracting favorable notice, achieving recognition.*

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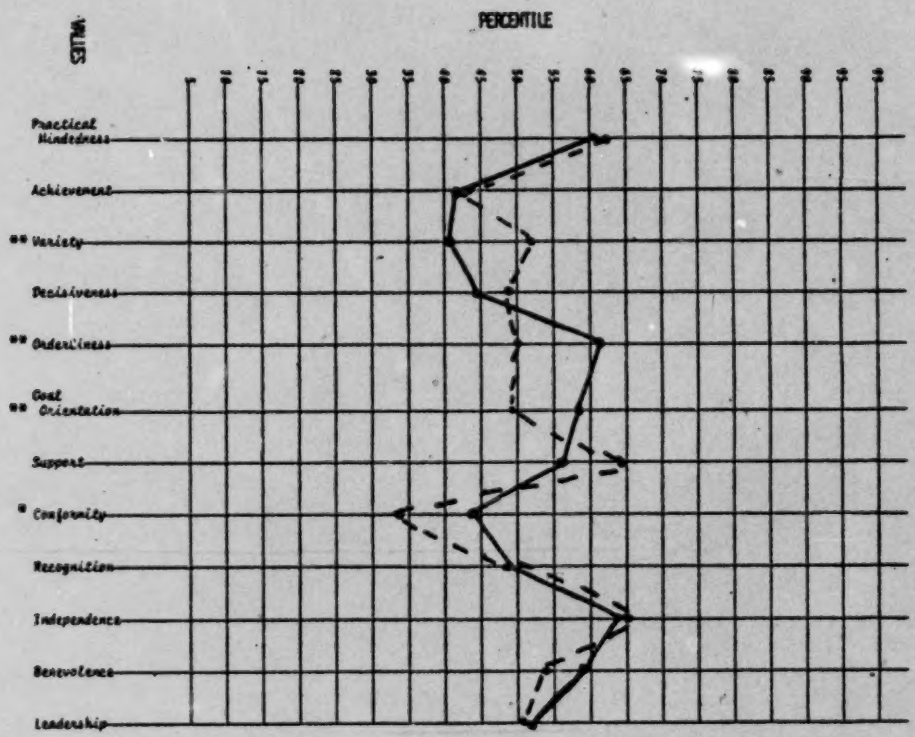
[1] *Manuals for Inventory of Personal Value and Inventory of Interpersonal Value, Leonard V. Gordon, Science Research Associates, Inc., Chicago, Illinois. 1960-1964-1965.*

FIGURE 7

——— Developmental Students N = 318

– – – Non-developmental Students N = 128



**Significant at .01 level.

*Significant at .05 level.

The mean percentiles attained by first semester developmental students are generally congruent with those of the second semester. For comparison, the mean percentiles attained by the non-developmental students are also plotted. Non-developmental students valued variety significantly more and conformity, goal orientation and orderliness significantly less than developmental students.

These significant value factors are described as:[1]

> Variety: To do things that are new and different, to have a variety of experiences, to be able to travel a great deal, to go to strange or unusual places, to experience an element of danger.
>
> Goal Orientation: To have a definite goal toward which to work, to stick to a problem until it is solved, to direct one's efforts toward clear-cut objectives, to know precisely where one is headed, to keep one's goals clearly in mind.
>
> Conformity: Doing what is socially correct, following regulations closely, doing what is accepted and proper, being a conformist.
>
> Orderliness: To have well-organized work habits, to keep things in their proper place, to be a very orderly person, to follow a systematic approach in doing things, to do things according to a schedule.

The decreases and increases in the valuing of selected factors may suggest that developmental students receive support from their program but concurrently the need for recognition increases during a term of study. The decrease in the independence factor may also be related to the support often provided by the developmental programs.

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[1] Manuals for Inventory of Personal Value and Inventory of Interpersonal Value, Leonard V. Gordon, Science Research Associates, Inc., Chicago, Illinois. 1960-1964-1965.

Developmental students who were not enrolled at their first-choice college demonstrated some significant value differences from those attending the college of their choice. Table 2 indicates that variety and independence were valued significantly more and orderliness and goal orientation less than students enrolled at their first choice institution. Developmental students who had not been influenced in their choice of college valued independence more than those who had been influenced.

TABLE 2

SUMMARY OF COMPARISON OF SELECTED RESPONSES BY DEVELOPMENTAL STUDENTS

Value Factor	Mean		T Value	Two-Tail Probability
	College is First Choice	College is not First Choice		
Variety	42.0%ile	53.3%ile	-2.51	.014
Orderliness	63.3%ile	49.3%ile	3.55	.001
Goal Orientation	58.3%ile	50.0%ile	1.88	.062
Independence	61.5%ile	73.2%ile	-3.12	.002
	College Choice Influenced by Others	College Choice not Influenced by Others		
Independence	60.6%ile	69.5%ile	-2.50	.013

N = 258

Comparison of Developmental and Non-Developmental Students on Selected Value Factors. The comparison or non-developmental group had been in attendance at college for a greater period of time as evidenced by the significant mean differences of semester of enrollment as shown in Table 3.

TABLE 3

SUMMARY OF SELECTED FACTORS: COMPARISON BETWEEN DEVELOPMENTAL AND NON-DEVELOPMENTAL STUDENTS

Factor	Mean		T Value	Two-Tail Probability
	Non-Developmental Students	Developmental Students		
Semester of Enrollment	1.5	1.1	2.99	.003
Values:				
Variety	53.8%ile	41.8%ile	2.76	.007
Orderliness	50.8%ile	62.3%ile	-2.78	.006
Goal Orientation	49.1%ile	58.6%ile	-2.37	.02
Support	64.5%ile	56.7%ile	1.85	.06
Conformity	34.2%ile	44.0%ile	-2.41	.01

N = 402

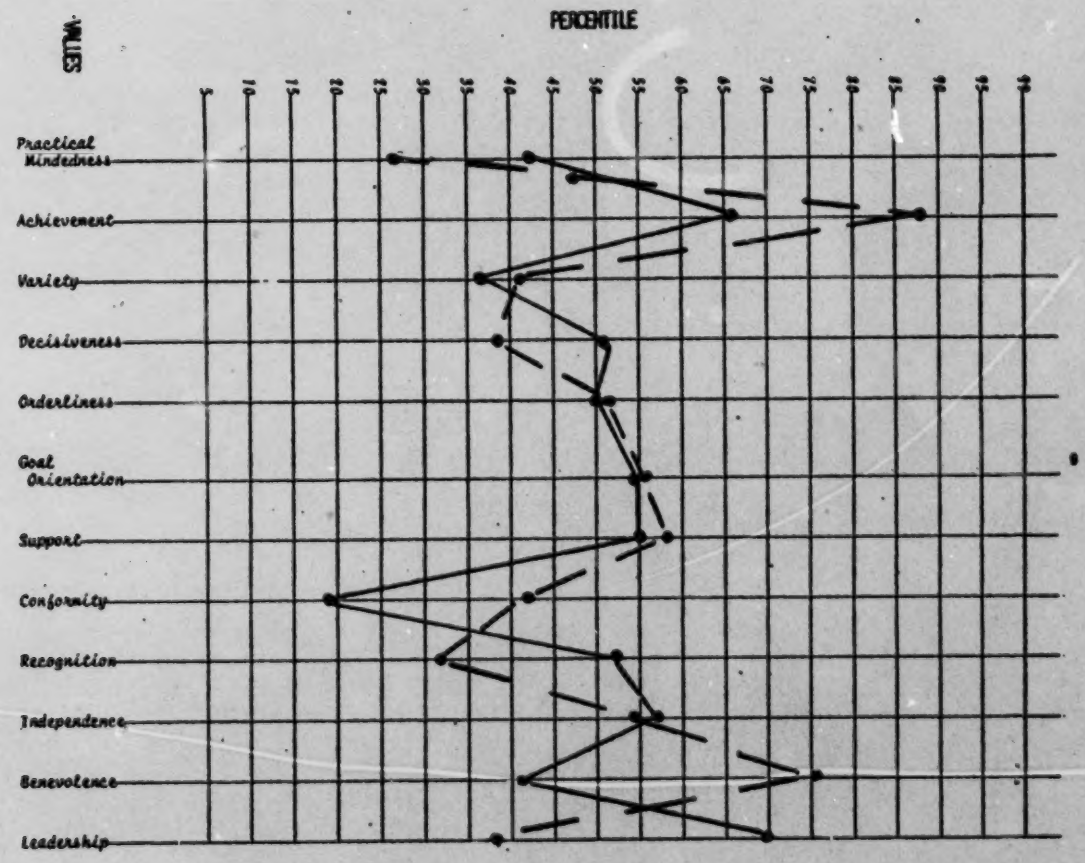
Significant or near significant differences in the values demonstrated by developmental students in comparison to non-developmental students are indicated in Table 3, providing numerical specifics to the profile presented in Figure 7. Non-developmental students tended to value variety and support more, and orderliness, goal orientation and conformity significantly less than developmental students. These results suggest a desire of developmental students for an ordered traditional life-style leading to a definitive goal and some rejection of "variety" -- a primary value of the comparison group.

Summary of Faculty/Staff Responses. During the first semester, 28 developmental faculty members and 13 non-developmental staff members from the cooperating sites completed the SRA Inventories. Although the numbers restrict extensive analysis, mean percentiles are summarized in Figure 8.

FIGURE 8

Developmental Faculty _____
N=28

Non-developmental Faculty _ _ _ _ _ _
N=13



Developmental faculty tended to value practical mindedness recognition and leadership more than their non-developmental colleagues. The image problem that developmental programs generally face may be responsible for the desire for leadership and recognition. Practical mindedness may be critical to effective functioning within programs of this nature reflecting a value for basics and the application of basics to course work. Achievement, conformity and benevolence were valued more by non-developmental staff. Perhaps the findings related to "benevolence" are found as contrary, however it may be due to the kinds of personal effort demanded of instructors in developmental programs. It is not unreasonable to believe that effective developmental faculty need to value practical basic educational skills, reflect a desire to have all students achieve or conform to desired college student behaviors, and possess a benevolent attitude toward those students who have difficulty achieving. Student achievement becomes the faculty members' achievement. These attitudes are different from a more traditional higher education faculty attitude that begins from the premise that if students do not meet standards on their own, they should not be in higher education.

Summary of Characteristics. Developmental students tended to have the same demographic profile as non-developmental with the following exceptions. Developmental students tended to have a greater frequency of males, had a mean range for age at an older level, and a greater percentage had been rejected by their first choice institutions. There were significant differences in the valuing of factors such as variety, orderliness, goal

orientation, support and conformity but the dimension of commitment to college and career were generally comparable.

Among the groups of developmental students the differences in value factors were identified relative to the choice variable. On a broader scale, some differences were noted at the time of pretesting second semester students in comparison to first term students. A change occurred from the beginning to end of semester resulting in similarity more than diversion of characteristics.

Developmental faculty tended to indicate values that relate to the needs of their students and the purposes of developmental programs. The differences were not unreasonable and in directions that might have been anticipated lending evidence to the feelings of many developmental faculty that they are and should be different from many of the colleagues.

The Interview Sample

In order to obtain data that could not be provided by questionnaire and standardized instruments, a student interview schedule was designed to seek opinions on college commitment, career commitment, self-perceptions as a student, and the carry-over power of developmental instruction to regular program courses. These five broad areas of the interview schedule provided basic data for the subsequent rating of will to succeed or motivation, vocational goal orientation and perceived impact of developmental program. The actual responses to interview items were categorized and used as rating criteria by the three interviewers. For example, statements such as the following suggest a strong motivation:

"I'm going to finish no matter how long it takes".

"After 20 years of marriage I'm finally going to make something of myself".

"I was going crazy sitting around being taken care of - I want to learn so I can support myself and family".

Project staff, who served as interviewers, rated will to succeed, vocational goal orientation and perceived impact of developmental program on a 5-point scale from "weak" to "strong". Impact areas of developmental programs were synthesized into six categories: motivation/attitude, reading, study skills, math, personal/career and none/negative.

Cooperating site personnel made the necessary arrangements for interviewing faculties and schedules at each local site. Project staff completed the individual student interviews and group staff interviews during two day on-site visitations to the institution. At one site, schedules were such that required small-group interviewing of students and staff to be completed in one day.

Individual interviews were completed with a sample of 116 developmental students at five of the six sites. The intent was to base the interview sample on developmental students who had previously responded to the questionnaire in the first semester and who now were fully enrolled in their career programs. The availability of these students and the problems of scheduling resulted in the interviewing of some students who had not previously completed the questionnaire and inventories. In statistical comparison (t test) of the interviewed group with the total sample of developmental students, no significant differences were determined, except that a greater number of minorities were interviewed than expected. The interviewees therefore are assumed to be a representative sample

of the larger group. Figure 9 is a composite summary of the interviewed sample.

FIGURE 9
SUMMARY PROFILE: INTERVIEWED SAMPLE OF RESPONDING DEVELOPMENTAL STUDENTS

Factors	Percentage Summary					
Preferred Program Areas	Science	4.7%				
	Business	23.3%				
	Criminal Justice	5.8%				
	Human Services, Liberal Arts, Independent Study	32.6%				
	Engineering Technologies	16.2%				
	Agriculture, Horticulture	12.8%				
	Hotel, Food	3.5%				
	Journalism	1.1%				
	Weak				Strong	
	1	2	3	4	5	N
Will to Succeed	2.4%	9.5%	23.8%	29.8%	34.5%	3.8
Strength of Vocational Goal	11.8%	11.8%	36.5%	11.8%	28.2%	3.3
Perceived Impact of Developmental Program	16.5%	32.9%	17.6%	9.4%	23.5%	2.8
-Identified Areas of Impact	Attitude, Motivation	19.8%				
	Reading	57.0%				
	Study Skills	62.8%				
	Math	16.3%				
	Personal, Vocational	9.3%				
	None or Negative	4.7%				

Reading Stanine	1	2	3	4	5	6	7	8	9	N
	12.7%	7.3%	16.4%	21.8%	12.7%	9.1%	9.1%	3.6%	7.3%	4.4

N = 86

The interviewed students represented the range of program or curricular areas. The percentage summary of preferred and enrolled program areas demonstrates that the category of human services, liberal arts and independent study areas comprise almost a third of the interviewed sample. This category includes those students enrolled in "pre-programs" in which the emphasis is the upgrading of basic academic and personal skills. Business programs were the second largest program category (23.3%) of the interviewed students. The engineering technologies (16.2%) and agriculture/horticulture (12.8%) program categories were third and fourth in order of frequency of preferred program areas.

The mean reading stanine for the interview sample was 4.4 which approximated that found for the total group. The percentage breakdown indicates a range of reading scores from the first to the ninth stanine. The greatest percentages cluster at the third, fourth and fifth stanines.

The mean ratings which were based on interview responses were moderate for the three categories of motivation or will to succeed, strength of vocational goal and program impact. Percentage frequencies for career goal strength and perceived impact of program tend to be distributed along the weak-strong continuum while will to succeed or motivation ratings tend to occur at mid-range and above. The perceived impact areas noted most frequently were study skills (62.8%) and reading (57%) followed by attitude, motivation (19.8%) and personal, vocational (9.3%). No area of impact was identified by 4.7% of the respondents.

The three interview ratings were correlated (Pearson) with other variables. The significant correlations are summarized in Figure 10.

FIGURE 10
RELATIONSHIP OF SELECTED FACTORS TO INTERVIEW RATINGS: SUMMARY

Factors	Strength of Will	Strength of Vocational Goal	Perceived Impact of Developmental Programs
Practical Mindedness	-.21*	-.13	-.20*
Decisiveness	.15	.22*	.06
Goal Orientation	.34**	.11	.29**
Support	-.11	-.19*	-.18
Recognition	-.15	-.20*	-.26*

N = 86

** .01 level of significance
* .05 level of significance

N = 86

Five value factors were found to be significantly related to one or more of the three interview ratings. Goal orientation was significantly related to the strength of will and of the perceived impact of developmental programs, as was decisiveness to strong vocational goals. There tended to be less of an impact perceived for developmental programs by those students who valued practical-mindedness and recognition. When vocational goals tended not to be firm, support and recognition were valued strongly. Practical mindedness was valued by those students who exhibited less success motivation.

The Successful Vs Non-Successful Developmental Students

The focus of this project has been with the determination of factors that are positive contributors to the success of two-year college students who are or have been enrolled in developmental programs. Success has been defined as the eligibility to continue in a chosen program or to make a conscious decision to change or leave the program. The dependent variables for success were identified as final grade point averages of the academic year and the status of students, i.e. probation, dismissed, withdrawn or eligible to continue, attained at the conclusion of the academic year.

As part of the data collection process toward success/non-success, developmental faculty were asked to predict the future success (status) of developmental students comprising the sample at each site. Characteristic behaviors and attitudes of successful students had been identified by faculty in response to reaction sheets early in the first semester. These characteristics were synthesized into ten categories, attached to a listing of developmental students and distributed to cooperating personnel at each site. The categories and form instructions follow:

SUCCESS PREDICTION

Attached is a list of students, enrolled in developmental studies during the first semester, and who responded to our survey instruments. Below are categories of characteristic behaviors/attitudes identified by responding faculty as characteristic of successful students (i.e academically eligible to continue program of studies, or consciously deciding to change program or college plans) and of students in danger of, or already failing a course.

Please check the categories of characteristics that you utilize most often in predicting the success or non-success of students. On the attached page, please check your predictions for the listed students.

	Successful Students	Unsuccessful Students
___	Motivated (committed, ambitious, industrious, responsible).	Unmotivated (apathetic, depressed, uncommitted, uninterested).
___	Assignments/projects completed on time.	Assignments/projects incomplete and late (plagiarizes, ignores detail, repititious errors, unable to generalize concepts).
___	Enjoys learning and learning activities.	Learning has less priority than other activities, i.e. job, hedonistic, family).
___	Goal oriented (realistic, flexible, purposed behavior).	Is not goal-oriented (erratic, irresponsible, non-purposed behavior).
___	Ability to plan time, use time effectively (organized, independent).	Lacks ability to plan and use time effectively (unorganized).
___	Achievement oriented.	Non-achievement oriented.
___	Is inquisitive (challenging and clarifying questions, communicates freely, alert to new ideas).	Does not ask questions or seek help.
___	Positive self-concept (realistic as to abilities, accepts constructive criticism, mature, optimistic, will to succeed).	Negative self-concept (unrealistic assessment of abilities, resents criticism, immature, lack of "success" drive).
___	Possesses academic survival skills (good study habits, organized, thorough, persistent, able to apply concepts, future oriented).	Lacks academic survival skills (poor study habits, unorganized, gives up easily, does not apply concepts).
___	Attends classes, seminars, labs regularly.	High rate of absenteeism.

The categories used most frequently in making predictions were identified as motivation, possession of survival skills, goal orientation, attendance, positive self concept and the ability to complete assignments in time given.

Prior to availability of GPA and status of students, these predictions were used as a proxy for success in a preliminary phase of data analysis. A correlation matrix was completed for the variables that through initial frequency, means, marginals and correlation analysis were identified as potentially significant. These variables included:

Twelve SRA value scores,
faculty predictions,
reading score,
rating of will or motivation,
rating of vocational-goal orientation,
rating of impact of program,
questionnaire responses to: faculty response to needs,
sureness of career goal,
skill area needs and application.

Four value factors were found to be significantly different between the total group of developmental and non-developmental students: variety, orderliness, goal orientation and conformity. In the correlation matrix, three of these four were correlated to the interviewer ratings of impact, goal orientation and will at coefficients of 50 and above.

A multiple regression analysis (SPSS) was completed in order to determine the degree of variance contributed by these variables to student success as estimated by faculty prediction. Based on the data available (N=20), the major contributing variables to student success were identified as:

Success = Perceived Developmental + Strength of Will + Value of Leadership Program Impact

45% 17% 11%

The remaining 27% was made up of seven variables which individually contributed from 6% to 1%: recognition, goal orientation, math, orderliness, reading applied, personal-vocational-motivational applied, and rating of vocational-goal orientation.

At the conclusion of the academic year actual GPA and status were collected. Responses to the SRA Value Inventories by successful and non-successful developmental students were compared and significant characteristic differences identified. In the summary of these variables, Figure 11 indicates that successful students can be expected to value orderliness, conformity and goal orientation significantly more than unsuccessful students. There is a tendency for successful students to rate the faculty response to their needs more positively at the end of the semester than at the beginning. The unsuccessful students, Figure 12, can be expected to perceive a greater positive impact from developmental programs and to regular coursework and to value variety significantly more than successful students. Faculty predictions were identified as significant variables for both successful and non-successful students.

FIGURE 11
CHARACTERISTICS OF SUCCESSFUL DEVELOPMENTAL STUDENTS:
SUMMARY OF FACTORS SIGNIFICANTLY DIFFERENT
FROM UNSUCCESSFUL STUDENTS

Factor	T Value	Two-Tail Probability
First Semester:		
Orderliness (value)	1.82	.073
Conformity (value)	1.79	.080
N = 187		
Second Semester:		
Faculty prediction of success	2.90	.005
Goal Orientation (value)	2.92	.006
Pre-Post Change: Rating of faculty response to needs	1.97	.063
N = 106		

FIGURE 12
CHARACTERISTICS OF UNSUCCESSFUL DEVELOPMENTAL STUDENTS:
SUMMARY OF FACTORS SIGNIFICANTLY DIFFERENT
FROM SUCCESSFUL STUDENTS

Factor	T Value	Two-Tail Probability
First Semester:		
Perception of positive impact - developmental programs	2.39	.027
N = 50		
Second Semester:		
Faculty prediction of non-success	2.87	.007
Variety (value)	2.79	.009
Pre-post change:		
Variety (value)	1.78	.089
N = 106		

The faculty predictions were correlated (Pearson) with data variables obtained from interviewing, performance, questionnaires and demographic information for successful and non-successful students. Figure 13 summarizes the correlations that are significant or near significant.

FIGURE 13
SUMMARY OF RELATIONSHIP BETWEEN
SELECTED STUDENT VARIABLES AND FACULTY PREDICTIONS

Student Variables	Correlation Coefficients: Faculty Predictions	
	Student Will Be Successful	Students Will Be Unsuccessful
Interview Items:		
Perception of Developmental Program Impact	-.37**	.30*
Performance Data:		
Reading Stanine	.29*	-.47**
Questionnaire Items:		
Sureness of Career Goal	.27*	.06
Perception of Need in Math Skills	-.08	.38**
Perception of Need in Personal-Vocational Skills	-.17	.32*
Skill Areas Which Students Perceive They Apply to Course of Study:		
Reading	-.25*	.37**
Math	-.30*	.42**
Writing	-.13	.30*
Personal-Vocational	-.21	.32*
Motivational	-.21	.33*

** .01 level of significance
* .05 level of significance

N = 43

The correlation indicates a strong relationship between career goal orientation and prediction of success. Perception of program impact relates to predictions of non-success. The student perception of need and application of skill areas is significantly correlated to predictions of non-success. These results again indicate that faculty predictions of success and non-success as defined can be utilized as one valuable predictor of the ultimate status of students.

Figure 14 summarizes student responses to questionnaire items as correlated to GPA and status. GPA and student status are correlated to each other at .78, significant at .001. From the data, students with high grade point averages and successful status can be expected to be older, have personally made their choice of college, see their course of study as useful, perceive personal skill needs in: writing and speaking more effectively, algebraic computations, efficient use of time, motivation, making career decisions, knowing the self, setting goals and getting along with others. These results imply that potentially successful students have perceptions and needs that differ from potentially unsuccessful developmental students.

FIGURE 14
CORRELATION OF STUDENT RESPONSES TO SELECTED QUESTIONNAIRE ITEMS TO GPA AND SUCCESS STATUS OF DEVELOPMENTAL STUDENTS

Student Variables	GPA	Success Status
Age	.21*	.10
Sex	.16	.18*
Choice of College Influenced by Others	.22*	.22*
Usefulness of Program Currently Enrolled	.21*	.23*
Rating of Response of Faculty to Student Needs	.18	.01
Skill Needs as Indicated by Students:		
-perform algebraic computations more effectively	.09	.19*
-able to write more effectively	.26**	.26**
-completion of acceptable written assignments	.24*	.22*
-able to speak more effectively	.20*	.09
-keep interested in courses	.33**	.17
-make career decisions	.26**	.25*
-application of career decision making	.17	.25*
-application of knowing and understanding self	.20*	.14
-application of setting goals for self	.21*	.26*
-getting along with others	.32**	.08

** .01 level of significance
* .05 level of significance

N = 76

Questionnaire responses were also analyzed using the chi-square statistic to determine relationships of selected variables for successful and non-successful students enrolled in developmental programs. These data were analyzed semester by semester. Figures 15 and 16 present the differences found between successful and non-successful student's success based on academic status and GPA at the conclusion of the academic year.

FIGURE 15
SUMMARY OF SELECTED DIFFERENCES BETWEEN SUCCESSFUL AND NON-SUCCESSFUL DEVELOPMENTAL STUDENTS: FIRST SEMESTER

Factors		Successful	Not Successful
Enrolled in college of first choice	Yes	59.1%	18.8%
	No	14.8%	7.4%
College choice influenced by others	Yes	33.1%	17.1% *
	No	40.6%	9.1%
Why enrolled in present course of study	Personal Choice	59.2%	20.3%
	Influenced by Others	14.4%	6.3%
Sureness of career goal	Not Sure	8.0%	4.0%
	Moderately Sure	31.4%	7.4%
	Very Sure	34.3%	14.9%
Current program perceived as useful step toward career goal	Best Compromise	5.7%	2.3%
	No	1.1%	.6%
	Yes	67.8%	22.4%
Why enrolled in developmental studies	Personal Choice	15.3%	5.1%
	Influenced by Others	58.5%	21.0%
When enrolled in developmental studies	At Registration	72.0%	24.6%
	During First 3 or 4 Classes	1.1%	.6%
	Mid-Semester	.6%	.6%
	Beginning of Second Term	0	.6%
Response of college to student needs	No	1.8%	0
	To Some Extent	29.4%	10.0%
	Yes	40.6%	14.7%
	Don't Know	3.5%	0
Response of faculty/staff to student needs	Negative 1	1.1%	0
	2	2.9%	0
	3	16.6%	5.7%
	4	34.3%	14.3%
	Positive 5	18.3%	6.3%

N = 187 *Significant Chi Square Value at .05

FIGURE 16
SUMMARY OF SELECTED DIFFERENCES BETWEEN SUCCESSFUL AND NON-SUCCESSFUL DEVELOPMENTAL STUDENTS: SECOND SEMESTER

Factors		Pre			Post		
		Successful	Not Successful		Successful	Not Successful	
Enrolled in college of first choice	Yes	59.2%	25.5%		67.6%	23.5%	
	No	11.2%	4.1%		5.9%	2.9%	
College choice influenced by others	Yes	24.7%	15.5%		32.8%	9.0%	
	No	44.3%	15.5%		38.8%	17.9%	
Why enrolled in present course of study	Personal Choice	58.2%	19.4%	*	56.5%	15.9%	
	Influenced by Others	11.2%	11.2%		17.4%	10.1%	
Sureness of career goal	Not Sure	6.1%	4.0%	1	5.8%	5.8%	
	Moderately Sure	26.3%	17.2%		29.0%	10.1%	
	Very Sure	37.4%	9.1%		39.1%	10.1%	
Current program perceived as useful step toward career goal	Best Compromise	7.1%	3.1%		11.8%	11.8%	
	No	2.0%	0		1.5%	1.5%	
	Yes	60.2%	27.6%		60.3%	17.6%	
Why enrolled in developmental studies	Personal Choice	22.9%	10.4%		17.4%	7.4%	
	Influenced by Others	49.0%	17.7%		56.5%	18.8%	
When enrolled in developmental studies	At Registration	54.2%	17.7%	1	58.8%	16.2%	
	During first 3 or 4 classes	8.3%	1.0%		1.5%	1.5%	
	Mid-Semester	0	1.0%		0	1.5%	
	Beginning of Second Term	4.2%	6.3%		10.3%	4.4%	
Response of college to student needs	No	0	1.1%	1	0	1.5%	*
	To Some Extent	22.8%	14.1%		15.4%	12.3%	
	Yes	47.8%	14.1%		60.0%	10.8%	
	Don't Know	0	0		0	0	
Response of faculty/staff to student needs	Negative 1	1.0%	0		0	1.4%	*
	2	3.1%	3.1%		4.3%	4.3%	
	3	15.6%	8.3%		15.9%	13.0%	
	4	27.1%	13.5%		27.5%	2.9%	
	Positive 5	24.0%	4.2%		26.1%	4.3%	

N = 106

*Chi Square Value Significant at .05
[1]Chi Square Value Near Significant Levels Reached at .06 Through .09

The data indicates that "personal choice" was a significant factor for successful students in college and program choice during both semesters. Successful students tended to make their choices based on personal preference more than non-successful students. The latter were influenced by "other" factors. Successful students tended to rate the college and faculty response to student needs more positively than non-successful students. This is especially true at the time of post testing during the second semester. The reinforcement of success felt by successful students influenced how helpful staff and institutional efforts were perceived.

It is interesting however that non-successful students rated faculty/college response to student needs significantly more positive at the beginning than at the end of the semester as did successful students although at a lower level of significance. The results indicate that both successful and non-successful students can be expected to perceive college and staff response to their needs less positively after involvement with the system.

Successful students tended to be significantly surer of career goals at the beginning of the semester than non-successful students. These differences remained but in a lesser degree at the end of the semester.

Contributing Variables to Success. The research effort has been conceptualized as expressed in the following simple equation:

Dependent Variable		Independent Variables
Student Success	=	Cognitive +
		Affective +
		Programmatic +
		Environmental

To identify the contributing independent variables to student success, step-wise multiple regression (SPSS) was employed.

Data were collected for these variables from five sources:

a) student questionnaire,

b) standardized instruments: Survey of Personal Values (SRA) and Survey of Interpersonal Values (SRA),

c) individual student interviews,

d) faculty success prediction,

e) records: grade point average and standardized reading scores.

Each group of students interviewed, fall, and spring pre/post, was examined relative to GPA and status of success as dependent variables in order to determine those independent variables that emerged as significant contributors to the prediction of student success. Not surprisingly, GPA and success status were correlated at the .001 level of significance. Figures 17 through 24 summarize the regression analyses.

FIGURE 17
SUMMARY: MULTIPLE REGRESSION - FALL DEVELOPMENTAL STUDENTS

Dependent Variable: Grade Point Average

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Goal Orientation	0.48229	0.23260	0.23260	0.48229	0.01275	0.52422
Recognition[1]	0.63751	0.40642	0.17382	0.37863	0.00725	0.29998
Reading Stanine	0.72711	0.52869	0.12227	0.27016	0.14178	0.40710
Method of Enrollment in Developmental Studies	0.77972	0.60797	0.07928	0.12682	0.43267	0.34872
Leadership[1]	0.81034	0.65666	0.04869	-0.20429	-0.00392	-0.16920
Achievement[1]	0.84364	0.71172	0.05506	-0.24775	-0.00486	-0.19733
Faculty Predictions of Unsuccessful	0.85976	0.73919	0.02747	-0.08687	-0.07972	-0.35220
Faculty Predictions of Success	0.88125	0.77660	0.03741	0.46190	0.07410	0.30728

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	6.50357	.81295	6.95259	.001
Residual	16	1.87083	.11693		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

FIGURE 18
SUMMARY: MULTIPLE REGRESSION - FALL DEVELOPMENTAL STUDENTS

Dependent Variable: Status of Success

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Recognition [1]	0.54028	0.29190	0.29190	0.54028	0.00890	0.53311
Perception of College Response to Student Needs	0.66969	0.44849	0.15658	0.21539	0.33914	0.47237
Goal Orientation	0.77035	0.59344	0.14496	0.34545	0.00804	0.47825
Practical Mindedness	0.82558	0.68158	0.08814	0.14827	0.00382	0.24451
Reason for Enrollment in Current Program	0.84509	0.71418	0.03260	-0.31180	-0.10612	-0.11912
Achievement [1]	0.85640	0.73342	0.01924	-0.38298	-0.00339	-0.19905
Usefulness of Current Program to Career Goal	0.86992	0.75676	0.02334	-0.14744	-0.32782	-0.22234
Independence [1]	0.87587	0.76715	0.01039	0.22428	0.00199	0.13267

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	3.06859	.38357	6.58909	.001
Residual	16	.93141	.05821		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

FIGURE 19
SUMMARY: MULTIPLE REGRESSION
INTERVIEWED DEVELOPMENTAL STUDENTS - REPRESENTATIVE SAMPLE OF RESPONDING STUDENTS

Dependent Variable: Grade Point Average

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Reading Stanine	0.59920	0.35904	0.35904	0.59920	0.26367	0.66445
Goal Orientation	0.68656	0.47136	0.11232	0.32787	0.01770	0.43283
Benevolence [1]	0.74324	0.55241	0.08105	-0.29580	-0.00760	-0.24787
Leadership [1]	0.78370	0.61418	0.06177	-0.03877	-0.00532	-0.16091
Writing as Needed Skill	0.81752	0.66834	0.05416	0.07633	0.36448	0.31042
Perceived Impact of Developmental Studies	0.83053	0.68977	0.02143	-0.11779	-0.17032	-0.22478
Math as Needed Skill	0.84627	0.71618	0.02641	0.11736	0.27538	0.23410
Personal, Motivation, Vocational as Needed Skill	0.86512	0.74843	0.03225	-0.26060	-0.10738	-0.19639

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	21.72223	2.71528	10.78451	.0005
Residual	29	7.30150	.25178		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

FIGURE 20
SUMMARY: MULTIPLE REGRESSION
INTERVIEWED DEVELOPMENTAL STUDENTS - REPRESENTATIVE SAMPLE OF RESPONDING STUDENTS

Dependent Variable: Success Status

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Reading Stanine	0.42528	0.18087	0.18087	-0.42528	-0.24167	-0.53882
Support [1]	0.50765	0.25771	0.07684	-0.19823	-0.00469	-0.14128
Personal, Motivational, Vocational as Needed Skill	0.54931	0.30174	0.04403	0.26800	0.27552	0.44581
Study Skills as Needed Skill	0.59161	0.35000	0.04826	-0.21171	-0.16083	-0.25231
Personal, Motivational, Vocational Skills Applied	0.62871	0.39528	0.04528	0.02695	-0.11700	-0.26500
Perceived Impact of Developmental Studies	0.65095	0.42373	0.02845	0.22794	0.31267	0.36509
Reading as Needed Skill	0.68822	0.47364	0.04991	0.05897	-0.65500	-0.33108
Writing as Needed Skill	0.72381	0.52391	0.05026	-0.15635	-0.31664	-0.23859

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	19.42592	2.42824	3.98906	.005
Residual	29	17.65302	.60872		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

FIGURE 21
SUMMARY: MULTIPLE REGRESSION
SPRING DEVELOPMENTAL STUDENTS - PRE-TEST

Dependent Variable: Grade Point Average

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Reading Stanine	0.41196	0.16971	0.16971	0.41196	0.15588	0.33509
Faculty Prediction of Success	0.48944	0.23955	0.06984	0.20666	0.22751	0.20338
Reason for Enrollment in Current Program	0.53184	0.28285	0.04329	0.25316	0.87628	0.24201
Conformity[1]	0.55818	0.31156	0.02871	-0.26334	-0.01626	-0.32685
Decisiveness[1]	0.59415	0.35301	0.04145	-0.08777	-0.01437	-0.24977
Perception of College Response to Student Needs	0.62865	0.39520	0.04219	0.14280	0.61091	0.20303
Faculty Prediction of Unsuccessful	0.64174	0.41184	0.01663	-0.24680	-0.35047	-0.15585
Recognition[1]	0.65768	0.43254	0.02070	-0.10145	-0.00792	-0.15523

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	53.72606	6.71576	4.57344	.001
Residual	48	70.48447	1.46843		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

FIGURE 22
SUMMARY: MULTIPLE REGRESSION
SPRING DEVELOPMENTAL STUDENTS - PRE-TEST

Dependent Variable: Success Status

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Reason for Enrollment in Current Program	0.47320	0.22392	0.22392	0.47320	0.59572	0.55153
Influence of Others on College Choice	0.52737	0.27812	0.05421	-0.23935	-0.15940	-0.17760
Faculty Predictions of Unsuccessful	0.56234	0.31623	0.03811	-0.20125	-0.11262	-0.16789
Orderliness [1]	0.58926	0.34723	0.03100	-0.09305	-0.00234	-0.13390
Independance [1]	0.60089	0.36107	0.01384	0.00883	0.00213	0.13096
Perception of Faculty/Staff Response to Student Needs	0.61265	0.37535	0.01428	0.10132	0.07330	0.16192
Present College - First Choice	0.62543	0.39116	0.01582	-0.14951	-0.16959	-0.14043
Faculty Predictions of Success	0.63708	0.40587	0.01470	0.13506	0.04342	0.13011

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	4.48592	.56074	4.09378	.005
Residual	48	6.56671	.13681		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

FIGURE 23
SUMMARY: MULTIPLE REGRESSION
SPRING DEVELOPMENTAL STUDENTS - POST-TEST

Dependent Variable: Grade Point Average

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Conformity [1]	0.35540	0.12631	0.12631	-0.35540	-0.01037	-0.19599
Goal Orientation	0.50150	0.25150	0.12519	0.35113	0.01749	0.31218
Perception of College Response to Student Needs	0.57331	0.32868	0.07718	0.35282	1.45785	0.47848
Reading Stanine	0.69471	0.48263	0.15395	0.23889	0.18171	0.49983
Leadership [1]	0.73357	0.53812	0.05550	0.20691	0.01521	0.31165
Faculty Prediction of Success	0.77040	0.59351	0.05539	0.29400	0.41808	0.38295
Sureness of Career Goal	0.79693	0.63510	0.04158	0.15423	0.63383	0.31358
Independence [1]	0.82318	0.67763	0.04254	0.06127	-0.01454	-0.24964

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	58.06798	7.25850	7.88272	.0005
Residual	30	27.62433	.92081		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

FIGURE 24
SUMMARY: MULTIPLE REGRESSION
SPRING DEVELOPMENTAL STUDENTS - POST-TEST

Dependent Variable: Success Status

Summary Table

Variable	Multiple R	R Square	RSQ Change	Simple R	B	Beta
Variety[1]	0.39170	0.15343	0.15343	-0.39170	-0.00528	-0.31515
Conformity[1]	0.48825	0.23839	0.08496	-0.24104	0.00025	0.01568
Leadership[1]	0.52659	0.27730	0.03891	0.13515	0.00622	0.41980
Faculty Predictions of Success	0.55593	0.30905	0.03176	0.24749	0.12992	0.39201
Sureness of Career Goal	0.59334	0.35206	0.04300	0.22911	0.19077	0.31089
Support[1]	0.62084	0.38544	0.03338	0.05394	0.00459	0.24128
Influence of Others on College Choice	0.63870	0.40794	0.02250	0.21404	0.11086	0.18330
Reason for Enrollment in Current Program	0.65972	0.43524	0.02729	0.19766	0.20715	0.19395

Analysis of Variance	DF	Sum of Squares	Mean Square	F	Significance Level
Regression	8	3.43724	.42966	2.88993	.05
Residual	30	4.46019	.14867		

[1] Measured by: Survey of Personal Values and Survey of Interpersonal Values, Leonard V. Gordon, SRA, Chicago, Illinois.

Six values that were identified by the SRA Inventories were among the contributing variables in more than one regression analysis. Goal orientation, support, leadership, conformity, recognition, achievement and independence were identified in a minimum of two analyses. Goal orientation was identified as a strong variable. In the Figure 17 summary, it contributes 23% of the variance as the first step variable for grade point average, fall students. It also contributes heavily to grade point average in the post-testing of spring developmental students and interviewed groups. The value of variety contributed 15% of the variance to success with the spring group at the end of the semester.

Conformity contributes 12% of the variance in the post-testing of the spring group to the dependent variable GPA and added significantly in the spring post-test analyses to the dependent variable of success status and the spring pre-testing to GPA. (Figures 21, 23, 24).

The value of recognition contributed 29% to variance with the fall group to the dependent variable of success status and significantly to the same group with GPA. (Figures 17 and 18). Independence and achievement were identified as contributing factors more than once and added less than 5% of the variance in each instance. (Figures 23, 22, 18 and 17). Other value factors were identified as significant contributors in at least one analyses: benevolence (8%), practical mindedness (8%), decisiveness (4%), and orderliness (3%).

The emergence of these and in particular the six previously identified value factors in the regression analysis, plus the significance of these same factors within other analyses of correlations and T values suggests a

reliability of their measure to determination of success by developmental students.

Other factors as measured by questionnaire items were identified as important contributors to student success. Reason for enrollment was the first-step variable in the spring pre-test (Figure 22) contributing over 22% of the variance to status of success. It was a strong contributor to success status with the fall (3%) and spring post (2%) groups, and to GPA (4%) with the spring pre group. Method of enrollment was indicated as a strong contributor to GPA (7%) with the fall group.

The response of the college to student needs was identified in three instances:

- *to status with the fall group, 15%, Figure 18,*
- *to GPA with spring post, 7%, Figure 23,*
- *to GPA with spring pre, 4%, Figure 21*

The staff response to needs was a contributing factor to success status spring pre group (Figure 22, 1%).

The influence of others to college choice, although not a first-step variable was a contributing factor to the status of success for the spring group at both pre and post administration (Figure 22, 5% and Figure 24, 2%). Sureness of career goal contributed to both dependent variables of success status and GPA for the spring group at post administration (Figure 23, 4% and Figure 24, 4%). Usefulness of the current program to this career goal contributed to success status of the fall group (Figure 18, 2%). The reason for enrollment in the current program was significant to success status with spring post (Figure 24, 2%). The college of enrollment as a first choice was significant to the status of success for spring pre (Figure 22, 1%).

Other variables external to the questionnaire and value inventories were part of the analyses. Reading stanines were identified as significant contributors in four of the analyses, and as first step variables contributed 18% and 35% of the variance to both dependent variables for the interview sample (Figures 19 and 20). Reading stanines contributed to GPA for the spring post (Figure 23, 15%) and fall (Figure 17, 12%) groups. In the pre testing of the spring group, reading stanine contributed 16% of the variance to GPA as a first step variable (Figure 21).

Faculty predictions of student success and non-success were independent variables. The predictions of successful students appeared as significant contributors to the dependent variables of GPA and success status at both pre and post administration with the spring group (Figures 21-24). The contributions to variance ranged from 1% to 4%. With the fall group, faculty predictions of success contributed to GPA at 3% (Figure 17). The predictions of unsuccessful students were found significant to GPA, fall group (Figure 17, 2%) and to both dependent variables with the spring pre group (Figures 21 and 22, 1% and 3%).

In the regression with the fall group, the eight independent variables account for over 75% of the variance to each dependent factor of GPA and status of success. The total cases were reduced due to missing data. The regressions for the spring group indicate that the eight independent variables account for over 40% of the variance. Here again, the reduction in cases was due to missing data. The analysis with the interviewed group, a representative sample, resulted in accounting for 52.4% of the variance of success status and for 74.8% of GPA. Missing data again

reduced the numbers somewhat. The significance levels for the regressions with each group ranged from one at .05 to two at .0005. Based on these data, it is assumed that the factors identified are significant and worthy of examination and application in the programming for students needing developmental support and instruction.

Conclusions and Implications

Two-year colleges have a basic orientation of meeting specific needs of individual students. From this focus emerges the elements of both diversity and commonality -- dimensions which on the surface appear to be diametrically opposed. The intended outcome of this research is to delineate factors that are constant and valid within developmental efforts for occupational students in a representative cross section of two year colleges. These constants are basic to programming and assessment decisions.

Definitions of developmental studies vary in accordance with the structure and components of the program. The inclusive definition offered as part of the first cycle of research remains appropriate and acceptable: Developmental studies programs are organized educational efforts providing a range of learning experiences intended to ameliorate educational skill and attitude deficiencies of students. Stated program intents, both specific and general, are compatible with this definition and underscore its validity as an acceptable basic definition.

As found in the statewide survey (1976), program designs do differ among institutions. Within these differences the common concern exists -- cognitive and affective student basic skills. Students with these needs and others have been broadly termed non-traditional. Student differences in

age, perspective, needs and motives constitute diversity far more than geographical location, institutional size or program approach. The success of these students needing developmental programs emerges from a combination of basic skills and drive or motivation to succeed. The skill component is largely made up of academic survival skills. Drive or motivation is a collection of intangibles that admittedly are difficult to identify, and vary among students.

Non-traditional students who make up a large proportion of clientele in developmental programs are older than traditional two-year college students. Their motive for returning to college is often economic, a seeking to upgrade employability skills and status. The availability of monetary support through social and educational agencies is instrumental in making college a feasible alternative for many who previously would not have considered it. These older and returning students, many of whom are women, value and want developmental program offerings. They perceive them as a desirable orientation, entry phase or refresher to academic pursuits which provides both attitudinal and skill development.

Somewhat conversely, younger students, those entering directly from high school into developmental offerings, generally do not perceive these programs as critical to their pursuits. Rather, they view the developmental programs as repetitions of high school studies and many exhibit indifference toward what they perceive as non-college studies. A minority of these students also express disappointment or dismay for being judged marginal before the fact.

The effectiveness of any program can be best determined through examination of its impact at the student level. In this effort student

success has been defined as being eligible to continue in a program, or to make a conscious informed career decision to change or leave the program.

To evaluate any program, there must be identification of the variables active in a situation. As in most instructional programs, there are groups of variables that, in different situations with different students, interact in diverse ways. There is no one best set of conditions that is universally true. This research has sought generalities that could be seen as strong clues for local verification in the specific program and student context.

Student-centered variables can be divided into two major groups: skill and drive or cognitive and affective. Either set can compensate for deficiencies in the other. Programs generally focus on academic skills but motivation or drive is also seen as important if not primary for some students. One must apply effort to increase skills or, more basic, one must have the will to apply existing skills. In many cases, a student is in fact judged on an application of effort more than the quality of the interim product of the effort from the perspective that if a student will develop the habit of continuing to try, the chances for success in later program studies are significantly increased.

As has been stated the goal of this effort is to provide some specifics to more completely state the following equation:

Dependent Variable		*Independent Variable*
Student Success	=	*Cognitive (skill) + Affective (drive) + Programmatic + Environmental*

Student success has been defined and through discussion and identification of factors within the independent variables, criteria for programming and program assessment will be indicated.

Cognitive and Affective Variables - Students. The success or non-success of developmental students is defined in this project as the academic eligibility to continue a program of studies or to consciously decide to change program or college plans.

At the conclusion of the academic year, the grade point average and academic status were collected as success criteria for the developmental students who had responded to survey instruments and/or had been interviewed. For the fall students, these criteria represented two semesters of college work and for the spring students, one semester. A percentage summary of the academic status of the students describes the proportion of successful and non-successful students included in the research sample:

Fall Entrants	Spring Entrants
72.7% academic success	60.2% academic success
24.6% academic failure	34.1% academic failure
2.7% withdrew	5.7% withdrew

In an attempt to determine factors that are characteristic of successful developmental students, the affective, attitudinal, will or drive aspect was examined by a number of techniques. Data from the SRA Inventories indicate that successful developmental students held somewhat different values than non-successful students. Successful students

strongly valued goal orientation and recognition and to a lesser degree independence. The valuing of leadership and support was inconsistent but significant. They consistently do not value variety. Conformity was identified as a strong but negative relationship to the success criteria. Success was related to achievement, benevolence, decisiveness and orderliness but in lesser and varying degrees.

The consistency found in the analyses for the values of goal orientation, variety, conformity and recognition in negative and positive relationships to success suggest these as important variables within the affective domain.

In addition to value factors, the question of commitment emerged as significant. The measures for commitment to career, college and/or program were integrated into the questionnaire and interview schedule. Successful students tended to have a firm career goal and the choice of their program and college tended to be based on personal choice rather than due to external influences. The successful student demonstrated a personal commitment to both long range and short term goals. Many of these students were clear in their intentions and this clarity was often based on experience.

The successful students approach the college experience positively. They find their needs being met by both institution and staff. With a career or personal goal as a guide or benchmark, the successful students seek and relate to those people and activities which aid them along their intended course of study and/or career goal.

An indicator of cognitive skill, the reading stanine, was collected at the end of the academic year for each responding student. The reading

stanine was a strong factor positively related to academic success. Congruently, successful students identified the skills of reading as an important area of need.

Faculty predictions were highly correlated with student success. Based on categories such as motivation, inquisitiveness, attendance, and goal orientation, faculty can be expected to predict the success of their students prior to mid-term. Data indicate these predictions to be the most consistent variable throughout the analysis.

Environment and Program Variables. The results indicate that environmental variables such as institutional response, geographical location, or student background are less critical than the more specific programmatic components. Data suggests that developmental programs with greatest impact are those with sufficient flexibility to allow students to feel a kind of individual attention. Maximum individualization tends to occur when a skill center or area staffed with qualified professionals is central to the program with courses and supportive services eminating from that locus. The term "center" is used in the broadest sense and denotes a "base of operation". It is more a psychological construct than a physical fact but it provides the central structure necessary for not only formal skill instruction but for attention to individual concerns or problems using other techniques and approaches whether skill-oriented or attitudinal. The "center" or base of operation is both a learning unit and an access to assistance throughout the college years. Individual courses are time oriented and are not available beyond the scheduled

semester. The location of the center for developmental work should be such that it is within the natural flow of student traffic. More important is an accepting open attitude of the staff who work there.

The utility of developmental programs increases with the extent of professional supportive interaction that exists between developmental staff and other faculty members. The presence of interaction results in increased respect and acceptance of the program and its contribution to student needs -- often relative to subject content and the necessary skills for academic survival. Peer acceptance and recommendation tends to result in more students taking advantage of developmental offerings.

The group of students that are termed non-traditional increasingly constitute a larger percentage of the total student body. They have special needs and are often a good judge of how these needs can be met most effectively.

The selection process for developmental programs appears most satisfactory to students when the choice is theirs, and/or there is an identifiable competency or performance level to be achieved. In both instances, there is a recognition on the part of students that their current academic skills need upgrading. Records and test scores aid faculty in making the most appropriate recommendations. Students generally respect these recommendations and express a desire to improve skills to "survival" levels.

Often recruitment procedures are linked to opportunities for financial supports, such as HEOP, BEOG, or OVR which have targeted client groups. The economically disadvantaged are often also educationally disadvantaged.

The numbers within these groups are often great enough for required "preparatory" or "extended" skill programs.

Indifference to developmental programs result when the experience is perceived as repetitious to previous educational experience whether the program is preparatory in nature for groups or provided on an individual basis. Known exit standards or competency levels for completing the program are viewed with favor by students, especially when the opportunity to return on an individual basis is recognized in order to obtain additional skill help as needed.

The skills that constitute reading, writing and studying are perceived as most valuable by students. Math is also valued, particularly when mathematics is central to the desired career program. The feeling of "being able to ask for help without fear of put down" was seen by students as critical -- a kind of "safe" home base from which to expand to other courses. As a result of this help, skills improve and confidence increases. Such an atmosphere is created through efforts of full-time professional staff who earn and subsequently build upon respect of other faculty.

The basic question of this effort is what factors are at work that cause some students enrolled in developmental programs to survive or be successful while others do not. The foregoing summary suggests environmental and programmatic factors that provide a positive and productive base within which these non-traditional students will function most effectively.

Implications. The results of these data analyses relative to cognitive and affective variables provide three strong implications to the program instruction and service offered by two-year institutions to the non-traditional students. These suggestions are summarized as:

- the use of the two SRA Inventories and in particular the scales identifying the significant variables valued by successful students should be considered as to their value to programming and planning for the successful and non-successful students.

- faculty predictions, based on the categories synthesized by this effort, should be recognized for their value as predictors and acted upon as early as possible. Special attention need not wait for a marking period. Reliable identification made prior to the onset of the cycle of defeat and negative reinforcement has potential for increasing success rate of developmental students.

- the feasibility of rating and obtaining an indication of commitment to college/career has been demonstrated. Awareness of the contribution of commitment allows greater potential for providing the kinds of counseling and related experiences needed to help the less committed find their preferred path.

- environmental and background characteristics are less significant to success than variables found within programs and the affective/cognitive factors associated with the students themselves.

- when examined from the student's point of view, there are more commonalities than differences among developmental students and programs.

The findings of this research can be utilized by local program staff at both the entrance/admission point and during the first semester of instruction. If a more accurate sorting of entrants is desirable, a college could accept students with the characteristics associated with

later success. More defensible is the use of these techniques and knowledges in the early identification and prescription of additional services for those students less likely to succeed. Each college is encouraged to determine their own local thresholds of measures such as reading level, goal orientation, value of recognition and career commitment as they exist relative to the configuration of the local program. The data also indicate that programs could be improved by building in more student choice accompanied by knowledgeable advisement and working for greater inter-faculty interaction. While certain generalities have been found, the scope of potential variables is such that any one program with its accompanying number of givens, such as size, funding level or restricted program admissions policies, could dictate the advisability of a different variable mix. While certain ingredients appear to be more important than others, it is a combination of the available factors that will decide the outcome.